

12, the specification, and claims 1, 6, 12, 14, 20, and 32 are amended, and an abstract is added. No new matter is introduced.

Claims 1, 14, and 32 are amended to more particularly point out the subject matter that applicants consider to be their invention. Claims 6 and 12 are amended to correct objections based on lack of antecedent basis. Furthermore, claim 20 is also amended to correct an informality.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned **“VERSION WITH MARKINGS TO SHOW CHANGES MADE.”** A clean version of the Abstract of the Disclosure is also attached.

Reconsideration in view of the above amendments and the remarks that follow is respectfully requested.

A. FORMAL REQUIREMENTS

1. Drawings

The Office Action objects to the drawings because of several informalities.

Figure 2 is amended, as noted by the red ink corrections made on the accompanying drawings, to add reference numeral “13”, which is mentioned in the description on page 8, line 23, and to change “fasteners 100” to “fasteners 81” to correct the duplication of reference numeral “100” in Figure 2 and in the description on page 10, line 31. Figure 4 is amended, as noted by the red ink corrections made on the accompanying drawings, to delete reference numeral 220.

Further, Figure 11 is amended, as noted by the red ink corrections made on the accompanying drawings, to add reference numeral “45”, which is mentioned in the description on page 15, line 16. Figure 11 is also amended to add reference numerals “41” and “43”. These additions reflect changes made in the specification to correct a duplication, not noted by the Examiner, of reference numerals 29a, 29b in Figure 2. Additionally, Figure 12 is amended, as noted by the red ink corrections made on the accompanying drawings, to add reference numeral

“43”, with the associated change made to the specification as noted above to correct a duplication, not noted by the Examiner, of reference numeral 29b in Figure 2. A Request for Approval of Drawing Correction is herein submitted.

With regards to the Examiner objection to the reference to “end plugs 50” on page 9, line 7 of the description, Applicants respectfully point out that “end plugs 50” may be found in Figures 19 to 21. The description erroneously referenced Figure 4 as containing the “end plugs 50” feature. The correct reference to Figures 19-21 is made by amendment to the specification as noted above.

Withdrawal of the objections to the drawings is respectfully requested.

2. Specification

The Office Action objects to the Applicants’ failure to include an Abstract of the Disclosure. An Abstract of the Disclosure is provided by amendment to the Specification as noted above.

Withdrawal of the objection to the specification is respectfully requested.

3. Claim Objections

The Office Action objects to claim 20 as containing the phrase “in situ.” This phrase is deleted by amendment as noted above.

The Office Action also objects to claims 21, 22, 24, and 39-43, asserting that the limitation “an integral moulded body” cannot be found in the drawings. Applicants respectfully point out that the “integral moulded body” of claims 21, 22, 39, and 40 is shown in Figures 6 and 7 and is noted at page 12, line 15, of the description. Also, the “integral moulded body” of claims 24 and 43 is shown in Figure 8 and is noted at page 13, line 8. Withdrawal of the objection to the claims is respectfully requested.

4. Claim Rejections – 35 U.S.C. § 112, second paragraph

The Office Action rejects claims 6 and 12 under 35 U.S.C. § 112, ¶ 2, as being indefinite. This rejection is respectfully traversed.

Claim 6 is amended as noted above to replace the phrase “in said passageway” with the phrase “within said housing,” which has the proper antecedent basis with reference to claim 1. Further, claim 12 is amended as noted above to incorporate the features of claim 7 into claim 12, thus providing the proper antecedent basis for the phrase “said semiconductor or LED.”

Withdrawal of the rejection of claims 6 and 12 under 35 U.S.C. § 112, ¶ 2 is respectfully requested.

B. THE CLAIMS RECITE PATENTABLE SUBJECT MATTER

1. Claim Rejections – 35 U.S.C. § 102

Vernondier Reference

The Office Action rejects claims 1-6, 9, 10, 11, 13, 19, 27, 28, 38, and 41 under 35 U.S.C. § 102(b) over U.S. Patent No. 4,994,944 (“Vernondier”). Applicants respectfully traverse this rejection since each and every element of claims 1-6, 9, 10, 11, 13, 19, 27, 28, 38, and 41 are not expressly or inherently described in Vernondier.

A. Claims 1-6, 9, 10, 11, 13, 19, 27, and 28

Vernondier fails to disclose each and every element of claim 1, which recites:

1. (Amended) A strip lighting device which includes:
 - an elongate housing that is at least partially translucent;
 - a multiplicity of light sources arranged at intervals within said housing; and
 - means to diffuse, disperse or scatter light from said light sources whereby on activation of the light sources, said housing glows when viewed from the outside so as to form a strip or line of light.

The Office Action asserts that Vernondier discloses a linear lighting system including a tubular housing with a base channel strip [10] and a cover strip [11] and multiple lamps [60],

wherein a cover strip [11] is an extruded translucent plastics element (figure 1, col. 4, lines 15-40). However, Vernondier does not disclose or suggest “means to diffuse, disperse or scatter light from said light sources whereby ... said housing glows ... so as to form a strip or line of light,” as is recited by claim 1.

The cover strip, as disclosed in Vernondier, is said simply to be “an extruded translucent/transparent plastics element, for example a polycarbonate material” (col. 4, lines 25-27, see also col. 2, lines 60-62). There is no disclosure in Vernondier of the latter features of claim 1, *i.e.*, means to “diffuse, disperse and scatter light” whereby “said housing glows ... so as to form a strip or line of light.” (Emphasis added.) Conventional tubular lamps, such as fluorescent tubes, do not have multiple discrete light sources within that inherently produce a substantially uniform “strip or line of light.” The present application appreciates that the critical utility of the strip lighting using discrete spaced LED lamps is achieved by providing for the cover of the housing to not merely be “translucent/transparent” as Vernondier suggests, but to be formed as means to diffuse, disperse or scatter light ... whereby ... the housing glows .. so as to form a strip or line of light.

In light of the above arguments, claim 1 is patentable over Vernondier since Vernondier fails to disclose each and every element recited by claim 1. Dependent claims 3-6, 9, 10, 11, 13, 19, 27, and 28, which include all of the features of claim 1, are patentable for the same reasons as given above. Moreover, claims 3-6, 9, 10, 11, 13, 19, 27, and 28 are patentable for reason beyond those given above. Claim 2 is withdrawn as noted above and is, therefore, not included in this discussion. An exemplary discussion follows, although the Applicants specifically traverse the Examiner’s rejections of each of claims 3-6, 9, 10, 11, 13, 19, 27, and 28.

For example, with regard to claim 3, Vernondier fails to disclose a “strip lighting device ... wherein the housing includes multiple scattering elements so that said optical effect includes a sparkling effect,” as recited in claim 3. The Examiner cites generally to Figure 1 and col. 4, lines 25-34. However, Vernondier does not disclose “multiple scattering elements” that produce a “sparkling effect.” The present application teaches that tube segment 14 may contain, for example, dispersed light scattering elements such as metal shavings or chips, or dust, that are effective to diffuse, disperse or scatter the emitted light and so cause a sparkling effect.”

Vernondier does not disclose or suggest any such “scattering elements.” Therefore, claim 3 is patentable over Vernondier for reasons in addition to those given above.

With regard to claim 4, Vernondier fails to disclose a “strip lighting device ... wherein said light sources are substantially not visible to the eye when not activated and viewed from outside said housing, and substantially not distinguishable when activated and viewed from outside said housing,” as recited in claim 4. The Examiner cites generally to Figure 1 and col. 4, lines 25-34. However, Vernondier does not disclose making the housing of translucent material such that the light sources are not visible to the eye when not activated and viewed from outside the housing and are substantially not distinguishable when activated and viewed from outside the housing. Showers et al., page 9, lines 18-21. Therefore, claim 4 is patentable for reasons in addition to those given above.

With regard to claim 9, Vernondier fails to disclose a “strip lighting device ... wherein said housing is solid, being moulded about said light sources or having one or more cavities to receive said light sources,” as recited in claim 9. The Examiner cites Figure 1 and col. 4, lines 25-34. However, Vernondier discloses a cover strip 11 which is designed to form an insert into the upper end of the channel-section base strip 12. According to this description and to Figure 1, the apparatus disclosed in Vernondier comprises two distinct sections for the tubular housing. Claim 9 recites the housing as being solid and moulded about the light source or having one or more cavities to receive the light source, as seen in Figure 2 of the present application. Therefore, claim 9 is patentable for reasons in addition to those given above.

With regard to claim 13, Vernondier fails to disclose a “strip lighting device ... further including means to mount the housing to a surface so that it extends along and adjacent the surface,” as recited in claim 13. “The PTO must apply 35 § 112, sixth paragraph in appropriate cases, and give claims their broadest reasonable interpretation, in light of and consistent with the written description of the invention in the application.” See In re Donaldson, 16 F.3d 1189, 1194, 29 USPQ2d 1845, 1850 (Fed. Cir. 1994) and MPEP 2181. Also, “while traditional ‘means for’ or ‘step for’ language does not automatically make an element a means-(or step-) plus-function element, conversely, lack of such language does not prevent a limitation from

being construed as a means-(or step-) plus-function limitation.” See Signtech USA, Ltd. v. Vutek, Inc., 174 F.3d 1352, 1356m 50 USPQ2d 1372, 1374-75 (Fed. Cir. 1999) and MPEP 2181.

The language of claim 13 recites “means to mount the housing to a surface” without reciting any additional structure and thus properly invokes 35 U.S.C. 35 § 112, ¶ 6. Accordingly, Figure 2 and the related description in the specification of the present application describe flexible hollow flanges 26a, 26b of the tube segment 14 and flexible hollow flanges 32a, 32b of mounting rail 30 which allow the tube segment 14 to be mounted to surface. Page 10, line 23-page 11, line 3. The Examiner cites Figure 3 and col. 5, lines 1-14 of Vernondier. However, Vernondier does not disclose the flexible means as taught in the present application. Therefore, claim 13 is patentable for reasons beyond those given above.

With regard to claim 27, Vernondier fails to disclose a “structure having one or more features highlighted or decorated by one or more strip lighting devices” according to the present invention, as is recited in claim 27. The Examiner cites the abstract of Vernondier, however, the abstract make no mention of a decorated structure. Therefore, claim 27 is patentable over Vernondier for reasons in addition to those given above.

With regard to claim 28, Vernondier fails to disclose a “structure ... wherein said highlighted or decorated feature of the structure is a corner or edge,” as is recited in claim 28. The Examiner cites Figure 5 of Vernondier, however, neither Figure 5, nor the related discussion at col. 5, lines 23-45, disclose a decorated structure, let alone a decorated structure that is a corner or edge. Vernondier only discusses a mounting device for the apparatus disclose therein. Therefore, claim 28 is patentable over Vernondier for reasons in addition to those given above.

B. Claim 38

Vernondier fails to disclose each and every element of claim 38, which recites:

38. A strip lighting system, including:
- a plurality of elongate housings at least partly of a translucent material;
 - means in each of said housings to locate support means for a multiplicity of light sources at intervals in said housing and activatable so that the housing, when viewed from the outside

through the translucent material, appears to glow and so to form a strip or line of light.

The Office Action asserts that Vernondier discloses a linear lighting system including a tubular housing with a base channel strip [10] and a cover strip [11] and multiple lamps [60]. Wherein a cover strip [11] is an extruded translucent plastics element (figure 1, col. 4, lines 15-40) and, furthermore, discloses an engaging portion [51] (figure 5, col. 5, lines 27-32). However, Vernondier does not disclose or suggest “means in each of said housings to locate support means for a multiplicity of light sources at intervals in said housing,” as recited in claim 38.

“The PTO must apply 35 § 112, sixth paragraph in appropriate cases, and give claims their broadest reasonable interpretation, in light of and consistent with the written description of the invention in the application.” See In re Donaldson, 16 F.3d 1189, 1194, 29 USPQ2d 1845, 1850 (Fed. Cir. 1994) and MPEP 2181. Also, “while traditional ‘means for’ or ‘step for’ language does not automatically make an element a means-(or step-) plus-function element, conversely, lack of such language does not prevent a limitation from being construed as a means-(or step-) plus-function limitation.” See Signtech USA, Ltd. v. Vutek, Inc., 174 F.3d 1352, 1356m 50 USPQ2d 1372, 1374-75 (Fed. Cir. 1999) and MPEP 2181.

The language of claim 38 recites “means ... to locate support means for a multiplicity of light sources ” without reciting any additional structure and thus properly invokes 35 U.S.C. 35 § 112, ¶ 6. Accordingly, Figure 2 and the related description in the specification of the present application describe grooves 19b provided for mounting ribbon cable strips, optical diffuser, reflector strips, or other accessories, where an array of light emitting diodes may be mounted on the ribbon cable strips. Page10, lines 10-13 and page 15, lines 22-31. Vernondier does not disclose grooves provided for mounting light sources.

Furthermore, as discussed with respect to claim 1, Vernondier does not disclose or suggest “housings at least partly of translucent material ... so that the housing, when viewed from the outside through the translucent material, appears to glow and so to form a strip or line of light,” as recited in claim 38. Specifically, Vernondier does not disclose a housing that “appears to glow” when viewed from outside and to form a strip or line of light.

In light of the above arguments, claim 38 is patentable over Vernondier since Vernondier fails to disclose each and every element recited by claim 38. Claim 41 is withdrawn as noted above and is, therefore, not discussed.

Withdrawal of the rejection of claims 1, 3-6, 9, 10, 11, 13, 19, 27, 28, and 38 under 35 U.S.C. § 102(b) is respectfully requested.

2. Claim Rejections – 35 U.S.C. § 103

(a) Vernondier over JP 09258676

The Office Action rejects claims 7, 8, 12, and 23-26 under 35 U.S.C. § 103(a) as being unpatentable over Vernondier in view of JP 09258676. This rejection is respectfully traversed.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) and MPEP 2143.03. If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is non-obvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and MPEP 2143.03.

Claims 7, 8, 12, and 23-26 depend from claim 1, which is, as noted above, patentable. For this reason, and the additional features they recite, claims 7, 8, 12, and 23-26 are also patentable. An exemplary discussion follows, although the Applicants specifically traverse the Examiner's rejections of each of claims 7, 8, 12, and 23-26. Withdrawal of the rejection of claims 15-18 under 35 U.S.C. § 103(a) is respectfully requested.

With regard to claim 8, the Office Action asserts that JP 09258676 shows the use of a transparency convex cover [2] (figure 1, col. 2, line 43). However, even if JP 09258676 is properly combined with Vernondier, the references still fail to disclose a "strip lighting device which includes ... means to diffuse, disperse or scatter light from said light sources whereby on activation of the light sources, said housing glows when viewed from the outside so as to form a strip or line of light ... wherein an outer or front face of the elongate housing is defined by a transversely domed or convex segment," as is recited by claim 8, which is dependent on and includes the features of claim 1.

As discussed with reference to claim 1, there is no disclosure in Vernondier, or in JP 09258676, of means to “diffuse, disperse and scatter light” whereby “said housing glows ... so as to form a strip or line of light.” (Emphasis added.) Therefore, claim 8 is patentable for reasons beyond those given above.

(b) Vernondier over Roossine

The Office Action rejects claims 14-18 and 32-37 under 35 U.S.C. 103(a) as being unpatentable over Vernondier in view of U.S. Patent No. 4,482,944 (Roossine et al.). This rejection is respectfully traversed.

The Office Action asserts it would have been obvious to use the raceway system of Roossine et al. in the decorative lighting system of Vernondier for strip lighting in order to provide a rail mounting means.

Claims 14-18 depend from claim 1 which is, as noted above, patentable. For this reason, and the additional features they recite, claims 14-18 are also patentable.

Claim 32 and its dependent claims 33-37, as well as claims 14-18, define an enclosure housing snap engageable with a mounting rail, where the enclosure itself contains the light sources. Vernondier, even if properly combined with Roossine, fails to disclose a “housing assembly for strip lighting, including ... an elongate housing defining an enclosure for multiple light sources,” as is recited by claim 32, as well as by claim 14.

In contrast, both Vernondier and Roossine show constructions in which the “rail” in part defines the enclosure and the translucent/transparent side is a cover for the rail. Vernondier, Figures 1-5 and Roossine, Figure 3. Moreover, the Roossine strip is not an enclosure at all but a raceway; the lamps themselves project from the raceway. Therefore, claims 14-18 and 32-38 are patentable for reasons in addition to those given above.

(c) Vernondier over Rouso

The Office Action rejects claims 20-22 and 39-40 under 35 U.S.C. 103(a) as being unpatentable over Vernondier in view of U.S. Patent No. 5,765,938 (Rouso et al.). This rejection is respectfully traversed.

The Office Action asserts that it would have been obvious to use the flexible core of Roussio et al. in the decorative lighting system of Vernondier for strip lighting in order to provide a flexibility of housing connection.

Claims 20-22 depend from claim 1 which is, as noted above, patentable. For this reason, and the additional features they recite, claims 20-22 are also patentable.

Roussio et al. illustrates the well known "Snakelight" (trade mark) flashlight. In relation to claims 20-22, Applicants respectfully submit that it would not be obvious to adopt the general structure of Roussio et al. – which is not a tube for housing multiple light sources but a pair of rigid body parts of a flashlight – to provide connectors in the present system. The devices are very dissimilar and only have in common the fact that they are lighting devices. Roussio is a flashlight, a portable device, and the present application teaches a fixed lighting system.

Vernondier, even if properly combined with Roussio et al., fails to disclose a "connector for physically coupling a pair of tubular components, including an integral moulded body ... wherein said integral moulded body further defines a relatively thin wall portion between said generally tubular portions, as recited in claim 39 and its dependent claim 40. In general, and with particular regard to claim 39, Roussio et al. does not disclose an integral moulded body defining: i) a pair of slidably engageable tubular portions and ii) a relatively thin wall portion between such tubular portions.

CONCLUSION

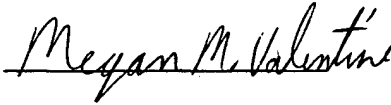
In light of the above arguments, claims 1-40 are allowable over the references cited by the Examiner. Therefore, Applicants respectfully request withdrawal of the outstanding objection and rejections and a Notice of Allowance for the present application.

A check for \$920.00 is included for the three-month extension fee. The Commissioner is hereby authorized to charge any additional fees created by this amendment or credit any overpayment to Deposit Account Number 04-1425. A duplicate copy of this amendment is enclosed for that purpose.

If the Examiner believes that a telephonic or in-person interview would be helpful, the Examiner is invited and requested to call (202) 824-8838.

Applicants respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

BY 

Megan M. Valentine
Reg. No. 47,149
(202) 824-8838
DORSEY & WHITNEY LLP
1001 Pennsylvania Ave
Suite 300 South
Washington, D.C. 20004
Fax (202) 824-8838

Date: October 17, 2001

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

Paragraph beginning at page 9, line 7, has been amended as follows:

Other components of the illustrated strip lighting system include end inserts 40 for providing tube segments 14 with end coupling formations, end plugs 50 (Figures 19 to 21 [Figure 4]) for terminating the light tube segments other than at junction boxes, and locking means 60 for disengagably coupling inserts 40 to the flexible tube segments 16 or to the end plugs 50.

Paragraph beginning at page 10, line 23, has been amended as follows:

The mounting rail 30 is dimensioned to be an interference fit in channel 27. The hollow thin-wall form of tube segment base structure 25 and the arrangement of ribs 32a,32b on mounting rail 30 allow both components to flex and deform so that the tube segments 14 can be demountably attached to the mounting rails by pressing the tube segments onto the mounting rails in the direction of the arrow 80 in Figure 2 [3]. The ribs 32a,32b flex inwardly towards each other and the hollow flanges 26a,26b of the tube flex apart to allow the rib formations 35a,35b to snap past ridges 29a,29b into undercuts 28a,28b. In this way, the light tube segment can be mounted to a surface such as a wall surface by first fixing the mounting rails in place against the wall with fasteners 81 [100] driven through the main web 31 of the rail, and then snapping the tube segment into place. Mounting rails 30 have a smooth flat rear face 33 for engaging the wall or outer surface on which the rail is mounted, and the fasteners are hidden from view in the assembled configuration. The mounting rails may include provision to support electrical conductors in particular applications. If it is desired at any time to rearrange or dismantle the strip lighting, tube segment 14 can be grasped and pulled off the mounting rails by inverting the snap action. To facilitate the snap-fit, there may be a longitudinal slit in the center of channel 27, at the position indicated in Figure 2 at 127.

Paragraph beginning at page 14, line 31, has been amended as follows:

As already noted, light tube segments 14 may be fitted with end inserts 40 to allow them to be connected to other fittings. A typical such insert is illustrated in Figures 11 to 13. It is an integral moulding in a suitable plastics material, preferably that used for segments 14 and 42 and mounting rails 30. The insert essentially includes three axially successive portions, i.e. a plug portion 42, and end flange 44 and a connector portion 46. Plug portion 42 is precisely matched to make an interference fit into either of the open ends of a light tube segment 14 and thus has an external profile complementary to the internal profile of tube segments 14. The interior of the insert is provided with a peripheral shallow shoulder 41 [29a] at the transition between plug portion 42 and flange portion 44, and with a longitudinally extending convex rib 43 [29b] at the top interior of plug portion 42. These features are for locating and keying electrical cable ribbon connectors as and if required.

Please insert the following text as the Abstract of the Disclosure:

--A strip lighting device includes an elongate housing that is at least partially translucent and a multiplicity of light sources arranged at intervals within the housing. Means is provided to diffuse, disperse or scatter light from the light sources whereby on activation of the light sources, a visible optical effect is produced when the housing is viewed from the outside.--

In the Claims:

Please cancel claims 2, 41, and 43.

Please amend claims 1, 6, 12, 14, 20, and 32 as follows:

1. (Amended) A strip lighting device which includes:

an elongate housing that is at least partially translucent;

a multiplicity of light sources arranged at intervals within said housing; and

means to diffuse, disperse or scatter light from said light sources whereby on activation of the light sources, said housing glows [a visible optical effect is produced] when [the housing is] viewed from the outside so as to form a strip or line of light.

6. (Twice Amended) A strip lighting device according to claim 1 wherein said means to diffuse light, disperse or scatter includes or further includes light diffuser means within said housing [in said passageway].

12. (Twice Amended) A strip lighting device according to claim 10 wherein said light sources are semi-conductor devices such as light emitting diode (LED) devices and wherein said semiconductor or LED devices are arranged on a printed circuit board strip extending along and mounted within said passageway.

14. (Amended) A strip lighting device according to claim 13 wherein said housing defines an enclosure for the light sources and said mounting means includes a mounting rail adapted to be fastened to said surface, and cooperable means on the rail and on said housing for effecting a snap or sliding engagement of the housing to the rail so that the housing is generally parallel to the rail.

20. (Twice Amended) A strip lighting device according to claim 1, further including connector means to physically couple said elongate housing to a similar housing of a further device whereby the housing may be relatively longitudinally displaced [in situ] by thermal expansion or building subsidence, without being uncoupled.

32. (Amended) A housing assembly for strip lighting, including:

an elongate housing defining an enclosure for multiple light sources and being at least partly of a translucent material;

a mounting rail; and

co-operable longitudinally extending formations on said rail and on said housing for effecting a snap or sliding engagement of the housing to the rail so that the housing is generally parallel to the rail.

ABSTRACT

A strip lighting device includes an elongate housing that is at least partially translucent and a multiplicity of light sources arranged at intervals within the housing. Means is provided to diffuse, disperse or scatter light from the light sources whereby on activation of the light sources, a visible optical effect is produced when the housing is viewed from the outside.